

LETTERS

Down-sizing Tank Battalions Also Has a Down Side

Dear Sir:

In his thought-provoking essay entitled "The Armor Battalion After Next: A Modest Proposal," in the Sep-Oct issue of *ARMOR*, LTC Benson proposes that tank battalions be reduced in size from 58 MBTs to 35. He also proposes that battalions should change from 4 to 3 companies and reduce their personnel to 164 soldiers. I would hardly call these "modest" changes.

From my perspective, there are two major considerations against such a proposal. First, this belief is predicated on the result of a flawed experiment — the Armored Warfighting Experiment. We have come to believe that the information systems on which we rely to formulate our logistical and operational estimates provide us perfect information. LTC Benson's proposal and the Army's growing over-reliance on artificial intelligence and information management systems might have merit if this was the case. Unfortunately, that is simply not so. Those enamored with the idea of perfect tactical information and our ability to apply combat power perfectly discount the enemy's ability to counter our systems. We assume the enemy is incapable of using deception, jamming, or other countermeasures. This is a dangerous assumption. From my position as a corps and division C2 and maneuver O/C at BCTP, I have seen too many senior tactical leaders led down a primrose path by believing unconfirmed information provided by JSTARS and other national assets that might not otherwise be at their personal disposal. An even more dangerous notion is that the enemy, much as the OPFOR at the NTC, JRTC, or the CMTC, is restricted in the way he can attack you. In a word, over-reliance on information management systems to determine course of action development and logistics operations can only lead to inflexibility.

The second tenet of LTC Benson's proposal, the idea that reducing our tank battalions from 58 to 35 tanks would not decrease a battalion's combat effectiveness, also makes me uncomfortable. To this proposal, I ask the following question — why? If a serious answer is that by reducing the number of tanks in our present battalions we can buy more tank battalions, I say we are treading dangerous grounds indeed. So doing has the dangerous potential to lead us down the same path our light infantry brethren took to create their two light divisions. For those of us who do not realize it, to have slots available to create two more light divisions without going over mandated manning levels, a decision was made to reduce the light infantry squad from 11 to 9 personnel. Today these squads are being filled at a level of 7 infantrymen per squad. Most of our infantry brothers will tell you that taking one casualty in each squad will render that squad combat ineffective because it loses the ability to fire and maneuver. Taking a tank platoon down to three tanks would have the same effect. Let's look at a modern tank battalion. Today's battalions

have 58 tanks. If you take away the battalion commander's, S3's, company commanders', and XO's tanks due to the need to C2 their respective elements, 10 main guns are not really in the fight. This leaves a total of 48 main guns engaged, if, of course, you have a battalion on line as you might in the desert of Saudi Arabia or NTC. These numbers discount maintenance or kill downs and the inability to unmask all tanks at the same time.

If you reduce the number of tanks to 35, you effectively reduce the number of main guns from 35 to 28. You have effectively reduced the number of tanks available for the fight by 20 (again discounting maintenance and combat downs). It would take very few losses to make a company combat ineffective. Besides the reduction of tank platoons and main guns available, the reduction of one company would make the battalion that much more inflexible. When the lead company of that battalion is engaged, decisive combat ensues because the battalion has neither the flexibility nor the ability to overwhelm the enemy with fire to give the unengaged force the ability to maneuver to find an assailable flank.

It seems to me that LTC Benson is basing his proposal on the Soviet/Russian model of 33 tanks per battalion. The problem is that Soviet/Russians do not maneuver battalions. That is, their battalion and even regimental commanders exercise great control but have very little flexibility and initiative. The information systems such as IVIS, applique, and ATCCS allow the division, corps, and army commanders to exercise great control over their subordinate formations — perhaps that is what LTC Benson proposes. If so, then I agree that battalion commanders, like company commanders, need no staffs. We will just go where we are told and execute battle drills.

In short, I believe reducing the number of tanks and functional staffs in a battalion just to buy more battalions and provide more command slots is a bad idea.

No doubt my views probably make me sound like a computer-phobic anachronism that belongs in the realms of antiquity. I also know that there are a lot of good systems out there that make information-gathering and processing easier. While these new systems may eventually lead to new warfighting doctrine and TTPs, let's not be so enamored with them that we let the tail of technology wag the dog of common sense.

I look forward to more discussions on this topic on SABRENET.

HANK ST-PIERRE
LTC, Armor
Ft. Lewis, Wash.

Units Stripped of Support Lack Robustness for Combat

Dear Sir:

LTC Benson, in his Modest Proposal, "The Armor Battalion After Next," September/October 1997 issue, "staked out an extreme position in the hopes it will raise blood pres-

sure...." To that end he was successful; however, insofar as proposing a viable Armor Battalion After Next, with removal of all the CS and CSS functions from the battalion, he is proposing an organization that was tried and failed in WWII.

Let me recount the story for you. On 21 March 1945, Third Army headquarters issued an order through XII Corps to the crack 4th Armored Division at Rosdorf, about 20 miles southeast of Frankfurt, Germany. The order was to organize a task force to attack the town of Hammelburg, some 60 miles to the northeast behind enemy lines. The operation had three objectives: feint the enemy away from the direction of the next major thrust; create confusion in the enemy's rear; and free American and Allied prisoners of war (POWs) being held in a camp near Hammelburg.

Upon receipt of the order, the reluctant Lieutenant Colonel Creighton Abrams, commanding Combat Command B of the division, ordered the formation of an armored column of not more than 300 men and 53 vehicles. The division had been hard-pressed and the operation would be lean. The plan was to cross the river Main and drive 60 miles behind the enemy line to the camp. On reaching the camp, as many of the 5,000 prisoners as possible were to be liberated and returned to the division.

Abrams picked his best men for the job — men tested in battle, men with courage and tactical skills. He selected a young captain, Abraham J. Baum — who had earned a pocketful of medals and the admiration of the division — to lead the raid.

Within the 300-man ceiling placed on the force, Baum selected the cream of an infantry battalion, the best of a tank battalion, and an assault gun platoon. To ensure speed and firepower, no ammunition, supply, or maintenance vehicles would accompany the task force. Extra fuel was carried in jerry cans strapped to vehicles. For the next two days, the captain was on the move, fighting, bypassing strongpoints, and reconfiguring his force as more men and vehicles became disabled. Some vehicles were destroyed by small-arms fire igniting the jerry cans of fuel strapped to them. Others were abandoned for mechanical malfunctions. Still others had to be abandoned because they simply ran out of gas.

This small but gallant force continued to strike deep, feint, and bypass, using all the battle tricks Baum knew. Finally, with a force of just over 100 men left of the 293 who began the mission, Baum's tanks burst through the barbed wire surrounding the prison. Taking as many of the newly freed POWs as he possibly could, he started his column on its return toward friendly lines. Only a few miles from the camp, he was surrounded. He ordered most of his men to filter through the encirclement back to the POW camp or to friendly lines. A few remained with the captain and fought until the last vehicle was destroyed. The captain and his small cadre themselves became POWs at Hammelburg.

In an article published later in the *Saturday Evening Post*, General Patton said, "I can say this — that throughout the campaign in Europe, I know of no error I made except that of failing to send a combat command to take Hammelburg."

Just nine days later, on 6 April, that "error" was corrected when tanks of Combat Command B, 14th Armored Division, took Hammelburg and liberated the 4,000 Allied prisoners that remained in the nearby camp.

A combat command in World War II was a measure of military strength, similar to our current brigade. It usually included a medium tank battalion, an armored infantry battalion, an armored field artillery battalion, and combat support and combat service support units. The combat command represented a powerful, self-sustaining force.

What are the two enduring lessons to be learned from this story?

One: Send an adequate combat force to do the job.

Two: Provide adequate logistics to support the force.

To assume we can achieve maintenance situational awareness and just-in-time supply, and remove the maintenance, supply and medical platoons from the battalion, is to disregard the realities of war, and carries a high degree of risk in terms of lives and mission success. Before we cut force structure out of the forward elements, it will be essential that the external CS and CSS support systems required to sustain the battalion have not only a developed and integrated concept, but a concept and support doctrine that is fully resourced and tested under combat conditions. To do otherwise would be to place our Armor battalions up the proverbial creek without a paddle. We may find that the CS/CSS goal is unattainable, rendering the entire concept unfeasible.

ERIC A. ORSINI
Deputy Assistant Secretary of the Army
(Logistics)
OASA (I, L&E)

Eric A. Orsini served as an armored officer in Combat Command B, 14th Armored Division, and in the Ordnance Corps from 1953 to 1971, retiring as a colonel.

Tanks Offer Shock Effect That Missiles Miss

Dear Sir:

Mr. Stanley C. Crist's article, "The M1A1 Abrams: The Last Main Battle Tank?," in the Jul-Aug 97 issue of *ARMOR*, lacks in research and is written from the perspective of someone without any first-hand knowledge of armored warfare. The article conveniently ignores the three distinguishing characteristics of tank warfare: Speed, Firepower, and Shock Effect. His proposed replacements offer none of these in a comparable measure to what we now possess.

The speed of armored warfare is achieved and maintained by a fast, durable tank, with

the capability to shoot on the move, maintaining the rapid momentum of the fight. I do not know how fast a missile-armed vehicle might be able to travel, but I do know that the electronically-guided missile system, with all of the necessary computer components, that is able to withstand the rigors of cross-country travel at the speeds currently enjoyed by the MBT, has yet to be developed. In the unlikely case that it was in existence, it could not maintain the existing battle tempo of the tank due to the need for halts to fire and frequently reload (the latter of which would expose crew members, who might often then need to be in MOPP-4).

The firepower advantages offered by the proposed replacement are unlikely, unreliable, and non-cost-effective. They are unlikely because of the ease of thwarting such a threat. Missile countermeasures have continually been developed and improved since the advent of the missile itself. Relying on electronic signals and signatures to guide weapons in what is now direct-fire warfare is tantamount to needlessly wasting the lives of soldiers and the combat effectiveness of our divisions. Having your television picture distorted by a passing trucker's CB radio is a minor irritation. Having one half of your company's basic load miss their mark from electronic interference is a situation more grim.

They are unreliable due to target acquisition. While a radar's ability to see through certain conditions can be beneficial, any system soon available will be unable to distinguish friend from foe with the necessary certainty. IFF? Sure, just produce enough for every single vehicle in the inventory. And since the proposal relies on all crew members being enclosed in the hull, we'll have to ensure our imaging software is constantly updated. Degraded gunnery will also become a thing of the past. By relying on the fragile electronics of this proposed missile system, we will have to resign ourselves to losing from the fight every single system that experiences a breakdown in the vehicle's air conditioner, etc...

(The proposal is also) non-cost-effective because of training. We cannot build confidence in a radar/electronic guided missile system without fielding and gunnery. Short of destroying actual, full-up enemy vehicles, sophisticated target simulators, destroyed on impact, will have to be developed. Current ballistic missile practice target systems being developed cost millions of dollars. And once the system gets validated, how often will our budget allow the soldiers to actually fire the system, building their necessary confidence preparing for combat?

Shock effect is completely absent in a picture that has this missile system remaining some minimum arming distance away from the enemy tanks and troops on the objective that needs to be seized, enroute to the next objective. How would this "Hellfire vehicle" fare in the close fight to seize the objective? How would its weapon systems complement the other members of the combined arms team in that fight?

From my experiences in a divisional cavalry squadron, I know that the Hellfire is a missile mounted on a 'vehicle' that is swarmed by

maintenance personnel, with technical experts standing by every hour it is not in the air. Should the tank follow it into the future? Sure, once we find a way to swarm it with maintenance assets and personnel, assign each a dedicated crew chief, keep it in a clean hangar, and make the crew sleep at least eight hours per day. But the tank is NOT a helicopter, and tankers don't WANT to be aviators. They want and need a system they can know will have the speed, durability, and reliability to keep them in the fight 24 and 7! They need first-hand knowledge it will hit its targets and destroy them. They need a vehicle they KNOW will have the necessary shock effect and ability to work closely with the infantry IN THE CLOSE FIGHT!!!

As a former company commander in an M1A2-equipped battalion, I know and welcome the advantages technology can offer us tankers. But I also know it will be a very long time before technology will effectively displace the MBT, a trained crew, and a basic load of 829A1 on the battlefield.

MICHAEL E. EVANCHO
CPT, Armor
Washington, D.C.

No, Thanks I'll Stick with the MBT

Dear Sir:

The unfounded comparison between the proponent of the main battle tank (MBT) and the horse cavalryman who refused to acknowledge the necessity to "stack sabers," is one we are accustomed to hearing. I refer to this argument as "unfounded" because unlike the experiences of the First World War, which clearly signaled the end of the horse and saber on the battlefield, there is no recent or foreseeable experience which signals the end of the main battle tank.

To the comparison of the tank and the horse cavalry, however, we must now add the dubious comparison between the tank and the battleship ("The M1A2 Abrams: The Last Main Battle Tank?," Stanley C. Crist, *ARMOR*, July-August 1997). While I am not willing to compare the apples and oranges of tanks and ships, I would like to address some of the concepts Mr. Crist espouses in his article.

The article begins with a discussion of "The Missile Option" as the armament of the future. Mr. Crist cites the fact that missiles have improved greatly since the days of Yom Kippur. He exhorts the merits of electronic guidance of modern missile systems, asserting they are free from the distractions (fear, nearby shellbursts) which hampered the tracking of earlier, human-operated missile systems. While I concede his point in reference to fear and shellbursts, I would not bet the lives of my tankers on the superiority of electronic guidance systems in a direct-fire fight. Electronic systems, by their very nature, are susceptible to interference by other electronic systems. Any individual who has an electronic garage

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door opener and a cellular phone knows how certain electronic devices can interfere with the working of other electronic devices. Electronic countermeasures to guidance systems can be easily and rapidly produced. Such devices employed by an opponent in great enough quantities would render our "electronically-guided" rounds as ineffective as a "nearby shellburst" renders the operator of a TOW or Sagger. The only thing which will interrupt the flight of a properly aimed KE round to its intended target is another target suddenly masking it. I'll take that interruption over someone "jamming" my rounds any day.

Mr. Crist cites the development of a missile, termed a NAG, in India. The missile was to be employed as the armament for a tracked vehicle. He goes on to speculate how effective such a vehicle could be when coupled with a ground surveillance radar system (GSR) as part of the fire control system — being capable of engaging targets through elements which currently "block thermal sights." While I concede the capabilities of such a fire control system would be formidable, I would point out that the signature of such a system would also be formidable. Surely the author has heard of "cueing schedules," where specific radar systems are activated at specific times for a specific duration of time. Leaving a radar system on indefinitely creates a signature which is easily detectable by the opposing force, and generally results in targeting by his artillery. Such a system, when used as part of a fire control system, would have to be left on indefinitely. We have enough of a concern already with thermal signatures without having to worry about a signature caused by radar! Additionally, the GSR, as part of the fire control system, suffers from the same susceptibility to electronic jamming as all other types of radar (and missiles). I cannot think of anything which could "jam" a GPS, CITV, or GAS.

In his article, Mr. Crist hypothesizes on the rate of fire and engagement capability of an M1A2 with that of a "properly designed, missile-armed FCS." Not surprisingly, he finds the M1A2 lacking. I cannot presume to comment on what he believes a "properly designed" vehicle is. I can only offer the following information: A prototype of a tracked, ground-launched Hellfire system was commissioned by the U.S. Marine Corps in 1989. The prototype, based on an M113 chassis, was completed by Emerson Electronics and Space Corporation (in conjunction with the producer of Hellfire missiles, Rockwell International) in 1991. Upon reviewing pictures and statistics of the system as portrayed in *Jane's Armor & Artillery* (1991-92 Edition), one will notice that the 2 missile pods mounted on the vehicle contain 4 missiles each. Though no figures were given for the basic load, one can safely presume it is less than 25. After firing the 8 missiles in the pods, one would have to reload the pods (exposing a crewman in the process). This pretty much makes the rate of fire question moot. Also, I do not believe that most tankers would want to trade the basic load of the Abrams series (already limited in comparison to the M60A3) for anything less.

The author issues a challenge to the Armor community in the last paragraph of his article: Will we "follow Javelin and the Hellfire on the path to the future?" Having led a platoon of M1A1s in Desert Storm and having commanded one of the first M1A2 companies fielded, I can only say I hope not. I offer this "worst case scenario" based on the author's concepts: Having abandoned the MBT, following "Longbow Hellfire on the path to the future," you now sit in your vehicle under a hail of artillery brought on by your GSR signature. Your last Hellfire in the pod just short-lined because someone in a van on the other side of the battlefield is playing the Electronic Warfare game. Your GSR fire control system has been rendered useless by that same individual. You're about to send someone outside to reload your pods when suddenly an "old battleship" from the opposing side slips behind your position and pumps a SABOT in your grille doors. No thank you, I'll stick with the MBT.

The future of the tank is as finite as our willingness to improve it. Continued developments in the areas of sight resolution, fuel-efficient power packs, composite armor, and traditional KE/CE munitions are "the path to the future," not the scrapping of a combat-proven design.

RONALD J. BASHISTA
CPT, Armor
Dresden, Germany

What Missile Vehicles Miss: The Shock Effects of Tanks

Dear Sir:

Mr. Stanley C. Crist's article, "The M1A2 Abrams: The Last Main Battle Tank?," in the Jul-Aug 97 issue completely missed the bore-sight panel. In his comparison of past naval forces to the main battle tank, Mr. Crist forgets three important factors that differentiate the MBT from any other vehicle on the battlefield: vehicle endurance, shock effect, and the ability to accurately destroy vehicles on the move. The MBT's ability to withstand fire effects and still reach the objective cannot be compared to the survivability standards of an M2 or M113 chassis. Only an MBT is built to withstand fires from direct fire systems and reach the objective. And once on the objective, the shock effects, both physical and psychological, of a 68-ton vehicle hunting for targets is beyond measure. The MBT allows for accurate KE and CE fires to be taken to the enemy, not waiting for the enemy to reach the maximum distance of a missile system. And these direct fires are delivered on the move, not from a "short halt" mode that obtaining a target and firing a missile from one of Mr. Crist's suggested vehicles might involve.

Now, I'm not some anti-technology unabomber type, afraid of what the future might hold. Having just commanded an M1A2 company, I know the advantages of what technology can bring to the MBT. But victory on the battlefield can never be obtained from an air-

conditioned enclosure, engaging targets with missile and radar. Desert Storm showed us that. Victory on the ground is obtained in an "in your face" manner, where the bold warrior takes the fight to the enemy when he pleases.

To paraphrase GEN Creighton W. Abrams, "Tankers are not in the Armor Corps, Tankers are the Armor Corps." And as such, we tankers need to unite and decide to keep the main battle tank as the vanguard of the United States Army's offense and defense. Let us not become overwhelmed by what technology can supposedly do for us. Never underestimate the strength and energy of a finely tuned MBT and crew.

MICHAEL C. MORTON
CPT, Armor
Presidio of Monterey, Calif.

Is the New Scout Motto Death Before Dismount?

Dear Sir:

With the advent of the HMMWV-based task force and light cavalry scout platoons, there has been an either/or approach in tactical mission accomplishment. Either the mission is conducted mounted, or it is conducted dismounted. It is nearly impossible to conduct mounted and dismounted reconnaissance that support each other and accomplish the mission.

Under the current HMMWV MTO&E, a task force scout platoon has 10 Hummers with 29 enlisted and 1 officer. Each Hummer is manned by a driver, TC, and gunner. The scouts normally operate in 2-vehicle sections which provide the section sergeant with a total of 6 personnel (including himself) with which to conduct operations. Reconnaissance patrols should consist of 3-5 men. This is where the decision to stay mounted, or hide the vehicles with 2 guards and go dismounted, comes to bear. If the decision is to hide the HMMWVs with guards and go dismounted, the HMMWVs will be unable to cover or extract the patrol.

With the Bradley-series scout platoons, there is a big difference in their ability to conduct mounted and dismounted operations. A Bradley-equipped scout platoon has 6 Cavalry Fighting Vehicles, but retains the same 29 and 1 manning as the Hummer-equipped scouts. Each CFV has a crew of 5 scouts. Section level is still the normal operating level, but instead of having to choose between mounted and dismounted operations, the section sergeant can effectively do both. By dismounting himself and one of his dismounts, and two dismounts from his wingman's CFV, the section sergeants can place a four-man recon patrol on the ground and still man both of his CFVs with a three-man crew. The section sergeant controls the dismounted element while the wingman controls the mounted element. The weapons systems and

sights, along with the mobility of the CFV, are available to support the patrol and/or continue any portion of the reconnaissance mission.

The Future Scout Vehicle, as was briefed at the '97 Armor Conference, will likely have a three-man crew and a total of six FSVs per platoon. This will give the FSV scout platoon a manning total of 17 enlisted and 1 officer. The briefing of the FSV stated that there will be space for a fourth man or additional equipment. The FSV will be loaded with sensors, detectors, digital equipment and a mast-mounted sight. It will be high tech in every aspect, but if it is manned by a three-man crew, it will be unable to perform sustained operations. It will breed scouts that focus solely on screens of the whiz bang gadgets.

The minimum manning of the FSV should be four men. This would enable the section sergeant to put three men on the ground for security and reconnaissance patrols and still be able to man the vehicles for support and reconnaissance. The fourth man will also enable the crew to perform sustained operations, as well as perform maintenance on the fully tracked and turreted Future Scout Vehicle.

Given the maxim that he who wins the recon battle wins the fight, it is imperative that scouts are provided with not only the equipment but the personnel needed to accomplish the mission. The FSV is still in the design phase, so there is still time to ensure that it is manned appropriately. The FSV will replace all Hummers and Bradleys at the task force, brigade, and cavalry levels. It will be the reconnaissance platform for 15 to 20 years. We must field the FSV with a tactical view, and not from a numbers-crunch or gadget point of view.

"SCOUTS OUT"

SFC MONTY A. MILLER
Ft. Hood, Texas

Hot Loop Budget, Now Slashed, Was a Bargain for the Army

Dear Sir:

Well, the budget has finally struck the last bastion of intelligence. The Hot Loops are one of the strongest resources for exchanging ideas that I have seen in a long time. It would seem that some of the most knowledgeable soldiers in the Armor communities have subscribed to these assets and have successfully employed them in the tactical world.

As a National Guard E6 from the world of infantry, I will be among those hardest struck. The practical application of mortar doctrine in a cavalry atmosphere is never easy to adjust to. With the help of a regimental commander as well as others, I was able to improve my warcraft through this asset. This is knowledge that would have cost thousands to learn by trial and error.

Even the more trivial conversations — where to buy a Stetson hat, for example — saved those soldiers time and effort in carrying on the strongest of Cavalry traditions. Without this asset, the aviators who sought the hat would have been pressed into a global search for the best Stetson, and wasted more of the active soldier's already limited spare time.

Through this network, I communicated with a corporal from Canada, and found one of the first E6 tank commanders I ever met in the Army. SSG Sweigart (now SFC) taught me about the role of tanks in the cavalry, and with a resource like this one, could have taught others like me when I was a young E3.

As we stare into the abyss of an uncertain future, and as Saddam refuses to allow inspectors into chemical plants, why do we cut tools which cost little and teach most? This relatively low-cost training tool, if applied on a larger scale, down to the unit level, could allow new soldiers to ask the question they were afraid to ask in class (or maybe just didn't fully understand). It would allow the young cavalry XO an opportunity to ask a mortar PSG how to properly employ the mortars without showing ignorance to his own troops, and it would allow the wise old regimental commander a chance to help mentor young lieutenants without the pressure of the senior/subordinate relationship.

So now what is next? I guess I just have to smile, nod and march on. When do we cut programs like the Bradley for the Cavalry, and use assets which work better, cheaper, and without a logistics trail? An asset like the Cav Hot Loop costs so little in comparison to other fatty programs. I guess we really should consider a bake sale.

Splash, Out.

SSG JASON PORT
11C3H
Troop B, 1st Squadron
104th Armored Cavalry Regiment
28th ID(M), PAARNG

Ed. Note: At press time, funding for this initiative was still under review.

Before We "Quantum Leap," It Might Be Best to Look

Dear Sir:

Recent articles on Army modernization have been troubling because they seem to be absent of any discussion of the trade-offs for the Army as it leaps into the "Info Age," and the changes that will impact operations, people, and units.

Skeptics might ask if Army dollars are focused on the most probable war and serious threat, or the most politically/scientifically/industrially correct one.

Where does "Information War" fit among other Army priorities, like strategic deployabil-

ity and light infantry mobility and firepower? Are we "quantum-jumping" because we should, we must, or we can?

Information systems have a huge potential to speed and accelize time-consuming operational tasks, particularly sensor recon and targeting. But other uses have high potential for mischief or worse. They deserve ruthless practical, ethical, philosophical, and even moral proofs, not blind assumptions of cost/benefit payoffs.

It's less than professionally thoughtful to assume away either operational or human concerns in the crush to board the Information Age bandwagon. Here are some of them:

Immediacy Panic. Intervention of higher commands in subordinates' operations will increase exponentially with rapid transmission of "certainties," and the communications needed to meddle. The enemy entering one man's ambush may seem a looming Cannae of friendlies to another.

Data versus Information. Who makes and polices the distinction? Data is systemic chaff unless converted into operationally essential information for commanders and their staffs to analyze, decide, execute, and follow through on FAST.

Invasiveness. In peace or war, undue penetration of all aspects of subordinate units will be easy, dangerous, and without designed lockouts. Insecure, zero-defect leaders will kill speed and smother juniors' initiative, decisiveness, and risk-taking with queries about self-obtained, often unprocessed information. Is our criticism-shy psyche ready to do the knee jerk in "real time" to alleged "perfect knowledge"?

Vulnerability/Fragility. Man and nature can break systems. Start with the "crash" and its causes. Add hackers, weather, triple-canopy jungle, tunnels, decoys, disinformation, anti-sat systems, electronic combat — all threats to "world-is-flat" systems. What's the fail-safe back-up?

Indiscipline. Who or what is in charge? Net control stations still can't discipline the jabbering radios of the world's most commo-rich forces, much less this hydra.

Human Nature. Speed-of-light tools will worsen the immediacy and impact of corroded values, weak ethics, and evasions. Ambitious situational ethicists bankrupted Unit Status Reports with stubby pencils, not ray guns. They're still around, as are the sad results.

Intrusiveness. Living soldiers deserve some peace, too. Watch divorces soar and retentions sink when work stations reach every desk, barracks, and dinner table.

"Control what you should, not what you can," is a notion we failed to adopt in a simpler era. We must, and mold or force-fit it to our new systems, new media, and their proponents.

JOHN KIRK
BG (Ret'd), Armor
Lakewood, Wash.